



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/620,943	07/21/2000	Robert Keller	TI-30714	4054

23494 7590 08/23/2005

TEXAS INSTRUMENTS INCORPORATED  
P O BOX 655474, M/S 3999  
DALLAS, TX 75265.

EXAMINER

KAO, CHIH CHENG G

ART UNIT	PAPER NUMBER
----------	--------------

2882

DATE MAILED: 08/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/620,943

Applicant(s)

KELLER ET AL.

Examiner

Chih-Cheng Glen Kao

Art Unit

2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2,3,5,6 and 18-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2,3,5,6 and 18-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

1. The drawings were received on 7/8/05. These drawings are acceptable.

### ***Claim Objections***

2. Claim 23 is objected to because of the following informalities, which appear to be minor draft errors including grammatical problems.

In the following format (location of objection; suggestion for correction), the following corrections may obviate their respective objections: (claim 23, line 9, "optical link said collimated light beam"; inserting a comma after "link"), (claim 23, line 10, "of a receiver said controller"; inserting a comma after "receiver"), (claim 23, line 11, "generated by of said"; deleting "of"), and (claim 23, line 12, "separate form"; replacing "form" with - -from- -).

For purposes of examination, the claims have been treated as such. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 2, 18, 20, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orino et al. (US Patent 5627669).

4. Regarding claims 18 and 23, Orino et al. discloses an optical path-to-sight link (fig. 13) comprising: a transmitter (fig. 1) comprising a source (fig. 1, #1) generating a collimated light beam (fig. 1, #2) for transmitting information (col. 1, lines 12-13) and having a path directed outside of said transmitter (fig. 13), said transmitter (fig. 13, #20 on left) being pointed in a general direction of a receiver (fig. 13, #20 on right), a moveable mirror (fig. 1, #4) coupled in a path between said source (fig. 1, #1) and an exit point (fig. 13, #20) for said collimated light beam and for reflecting said collimated light beam to impinge on a photodetector (fig. 1, #8) in said receiver, a beam positioner consisting essentially of a controller (fig. 1, #12) responsive to the position of the collimated light in the receiver (fig. 1) for controlling orientation of said micromirror (fig. 1, #4) so that said collimated light beam is reflected onto said photodetector (fig. 1, #8), said controller (fig. 1, #12) being only responsive to an external signal generated by said receiver (fig. 1, signal from #8) in response to the position of the collimated light in the receiver, and further comprising a control loop or link (fig. 1, loop from #8 to 12) coupled between said controller (fig. 1, #12) and said receiver (fig. 1) for providing a control signal to said controller (fig. 1, #12) for controlling said micromirror orientation (fig. 1, #4), said control loop being independent of said optical link (fig. 1, #6).

However, Orino et al. does not disclose a micromirror.

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the system of Orino et al. with a micromirror, since such a

modification would have only involved a mere change in size. A change in size is generally recognized as being within the level of ordinary skill in the art. One would be motivated to make such a modification for a more compact system.

5. Regarding claims 2 and 24, Orino et al. further discloses wherein said micromirror comprises a single two axis rotatable mirror capable of reflecting light in any orientation within a predetermined field of view (fig. 2).

6. Regarding claim 20, Orino et al. further discloses wherein said control loop comprises a circuit (fig. 1, #11) for detecting the incidence of said collimated light beam on said photodetector (fig. 1, #8) and generating a detection signal and wherein said detection signal is said control signal coupled to said controller (fig. 1, #12) by said control loop.

7. Claims 3, 5, 6, and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orino et al. as applied to claims 18 and 23 above, and further in view of Hoen (US Patent 6253001).

8. Regarding claims 3 and 25, Orino et al. suggests a system as recited above.

However, Orino et al. does not disclose wherein a micromirror comprises a plurality of mirrors, each capable of being rotated in a single axis, capable of reflecting light in any orientation within a predetermined field of view.

Hoen teaches wherein a micromirror comprises a plurality of mirrors, each capable of being rotated in a single axis, capable of reflecting light in any orientation within a predetermined field of view (fig. 1, #22, and fig. 6).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the system of Orino et al. as modified above with the micromirrors of Hoen, since one would be motivated to make such a modification to process more signals (fig. 1) as implied from Hoen.

9. Regarding claims 5, 6, 26, and 27, Orino et al. suggests a system as recited above.

However, Orino et al. does not disclose wherein a micromirror is fabricated from silicon or metal.

Hoen teaches wherein a micromirror is fabricated from silicon or metal (col. 9, lines 56-60).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the system of Orino et al. as modified above with the mirror materials of Hoen, since it is within the general skill of a worker in the art to select a known material on the basis of its suitability. One would be motivated to make such a modification for easier manufacturing.

10. Claims 19, 22, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orino et al. as applied to claims 18 and 23 above, and further in view of Scifres (US Patent 6025942).

Art Unit: 2882

Orino et al. as modified above suggests a system as recited above.

However, Orino et al. does not disclose modulation and demodulation for Ethernet protocol.

Scifres teaches modulation and demodulation (col. 2, lines 19-24) for Ethernet protocol (col. 2, lines 44-47).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the system of Orino et al. with the modulation and demodulation of Scifres, since one would be motivated to make such a modification to increase data transmission speed (col. 2, lines 37-39) as shown by Scifres.

11. Claims 21 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orino et al. as applied to claims 18 and 23 above, and further in view of Agazzi et al. (US Patent Application Publication 2001/0035994).

Orino et al. as modified above suggests a system as recited above.

However, Orino et al. does not disclose a VCSEL laser diode.

Agazzi et al. teaches a VCSEL laser diode (col. 6, lines 22-24).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the system of Orino et al. as modified above with the VCSEL of Agazzi et al., since one would be motivated to make such a modification for lower power consumption.

Art Unit: 2882

***Response to Arguments***


12. Applicant's arguments with respect to claims 2, 3, 5, 6, and 18-29 have been considered but are moot in view of the new ground(s) of rejection.


***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Cheng Glen Kao whose telephone number is (571) 272-2492. The examiner can normally be reached on M - F (9 am to 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
gk

  
DAVID V. BRUCE  
PRIMARY EXAMINER